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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/677,356	10/02/2000	Lothar Hofmann	GR 98 P 3228 P	3553

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EXAMINER

TRAN, HIEN THI

ART UNIT PAPER NUMBER

1764

DATE MAILED: 07/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/677,356

Applicant(s)

HOFMANN ET AL.

Examiner

Hien Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "25". A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "1" has been used to designate both the diesel engine 1 (page 7, line 19) and combustion system 1 (page 18, line 24). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings to comply with CFR 1.84(p)(5), e.g. they should include the reference sign(s) mentioned in the specification and vice versa.

Specification

5. The disclosure is objected to because of the following informalities:

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On page 6, line 21 it is unclear as to what is intended by “time average” and how to determine said time average.

Appropriate correction is required.

6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, in claims 1 and 11, it is unclear as to what the “time average for the concentration of the pollutant” is intended and how to determine such time average for the concentration of the pollutant.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, line 3, it is unclear as to what applicants are attempting to recite, specifically, it is unclear as to what the “time average for a concentration of a pollutant” means and how to determine such time average. See claim 11 likewise.

In claim 6, line 3 “long” is a relative term and therefore is vague and indefinite.

In claim 17, lines 4-7 it appears that the claim is inconsistent with the recitation set forth on page 16, lines 10-13 of the specification. The instant catalyst material appears to include all of the recited elements with specific range for each element.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-8, 10-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Polcer (5,047,220).

With respect to claims 1, 4, 8, 11, 14, Polcer discloses a device and method for catalytically removing a pollutant contained in an exhaust gas of a combustion system comprising: an exhaust pipe 15 conducting an exhaust gas; an introduction device 16 communicating with said exhaust pipe for introducing a reagent, such as ammonia, into the exhaust gas; a deNOx catalytic converter 18 configured to conduct a flow of the exhaust gas and for reacting the reagent with the pollutant contained in the exhaust gas, said catalytic converter being configured to substantially completely convert the pollutant; and a control unit 30 connected to said introduction device 16 for controlling a reagent throughput in said introduction

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device 16 in dependence on the concentration of the pollutant in the exhaust gas, and for determining a time average of the concentration of the pollutant in the exhaust gas and for metering the reagent substoichiometrically according to the time average (abstract, claims 1, 10, col. 2, lines 50-58, col. 1, lines 36-50).

With respect to claims 2-3, 12-13, Polcer discloses that the ammonia is introduced in substoichiometric proportions of 80-85% of the stoichiometric amount required (col. 3, lines 48-50, claim 10).

With respect to claims 5-7, 15, 16, Polcer discloses that the determining step includes measuring the pollutant with a pollutant sensor 21, measuring the concentration of the pollutant directly in the exhaust gas and determining the time average on the basis of relevant operating parameters of the combustion system (abstract, col. 3, lines 9-55).

Since it is unclear as to what applicants are attempting to recite as set forth above, it appears that the instant claims 1-8, 10-16 structurally read on the apparatus and method of Polcer.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 9, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polcer (5,047,220) in view of Schmelz (5,628,186) and Hagenmaier et al (5,512,259).

With respect to claim 9, Schmelz discloses the conventionality of using urea as a reducing reagent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to alternately use urea as a reducing reagent, as use of such is conventional in the art and no cause for patentability here.

With respect to claim 17, Polcer discloses one type of deNOx catalyst (col. 2, lines 50-58). Schmelz and Hagenmaier et al disclose another type of deNOx catalyst including titanium dioxide, tungsten trioxide, molybdenum trioxide and vanadium pentoxide.

It would have been obvious to one having ordinary skill in the art to select an appropriate type of deNOx catalyst, such as the one taught by Schmelz and Hagenmaier et al in the apparatus of Polcer as both types were art-recognized equivalents at the time the invention was made in reducing NOx from exhaust gas, absence showing any unexpected results.

The specific percentage of catalyst content is not considered to confer patentability to the claim. The precise percentage of the catalyst content would have been considered a result effective variable by one having ordinary skill in the art. As such, without more, the claimed percentage can not be considered "critical". Accordingly, one having ordinary skill in the art would have routinely optimized the amount of catalyst content in the system to obtain the desired

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purification thereof (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233.

In any event, Hagenmaier et al discloses the specific percentage for each element.


Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is 308-4253. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.

HT
July 14, 2003


Hien Tran
Primary Examiner
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